

Official Plan Review: Research Report

UPDATE OF HOUSEHOLD AND HOUSING PROJECTIONS

BACKGROUND

This report*, originally produced as a file report dated May 85, provides the basis for the household projection used in the Regional Development Strategy discussion paper. The information contained in this report has been made available to individuals and municipal staff, upon request, to assist in their review of the discussion papers which were published as part of the Official Plan Review in Dec 85.

PURPOSE

The purpose of this report is to re-examine the assumptions and methods used to arrive at the projections of household and housing requirements which underpinned the first stage of the Regional Official Plan Review (ending Dec 84), and to suggest what, if any, modifications are justified as a result of this re-examination.

The March 84 Regional Development Strategy discussion document attracted considerable criticism and requests for clarification on the projections...especially in relation to the high projection (725,000 people at 2001). Since the 725,000 threshold was confirmed by Council, in December 84, as a reasonable basis for the Official Plan Review, this paper only deals with that threshold.

Note: The 725,000 population threshold is not the Planning Department's estimate of what will occur by 2001. Rather it represents a reasonable upper limit of what could occur. Therefore the Regional Plan must indicate how this threshold will be accommodated in the eventuality it materializes. An important ingredient of such a Plan is the number and type of households that the 725,000 population threshold will generate, and the amount of housing (and land) this represents.

METHOD

A variety of published work was reviewed consisting of articles or studies** of demographic trends, household formation, and housing demand. Virtually all of the material reviewed was published post 1980, although many articles analyzed data from 1950 through 1981. The 1980 census in the USA and the 1981 census in Canada were the major (though not exclusive) sources of data used in the reviewed articles. The reason for concentrating on post 1980 studies was to capture any significant new trends that have been identified since the projections were first prepared (in 1979).

This paper reviews, in turn, the population projection, the household projection, and finally the projection of housing units. Since each successive projection embodies the assumptions and uncertainties of the former, the housing unit projection should be considered as illustrative. However, the high degree of uncertainty attached to such a projection does not discredit its formulation nor detract from its usefulness for planning purposes.

*A draft of this paper was reviewed by the Policy and Program Division in April 85, the results of which have been incorporated in this revision.

**The principal reports and publications which are reviewed are listed at the end of this paper. In addition to these, approximately four dozen shorter articles and numerous notes from journals such as American Demographics, Land Use Digest, Urban Land, and Urban Outlook were reviewed.

REVIEW OF POPULATION PROJECTION

The first step in this re-examination is to restate the assumptions and methods underlying the published population projection, and to indicate new evidence (if any) which bears on these assumptions. The importance of starting here is that population growth is a major (but not singular) force giving rise to household growth, which in turn generates the housing demand.

There are two basic components of the Planning Department's population projection (which employs a cohort survival technique), namely: net natural increase (births minus deaths) and net migration (in-migration minus out-migration).

Natural Increase

With regard to the number of projected births, the 725,000 projection is based on maintaining the age-specific fertility rates constant at 1981 levels. This represents an arbitrary truncation of a continuous trend to ever lower fertility rates which got underway at the end of the 50s, signalling the end of the so-called babyboom (in 1958 in Ottawa-Carleton). Although a slight rise in the fertility rate has been observed post 1975 for the age group 30-34 (evidence of an age-shift in fertility associated with postponement of child bearing), total fertility rate continued to decline all through 70s and 80s - remaining far below replacement levels.

If anything, the fertility assumption (by truncating the downward trend) is projecting more children than will actually be produced. Higher levels of female education and labour force participation have, in the past, been coupled with reduced fertility; as have the trends to postponed marriages and rising divorce. Further, it has been postulated that serial monogamy will eventually replace traditional perceptions and expectations about "normal" marriage. This may have the effect of further reducing fertility (i.e. if children are, in future, perceived as a potential impediment to remarriage). These (fertility reducing) effects are expected to persist - but the slope of the trend line will flatten. That is, fertility will likely continue to decline but at a decreased rate.

The likely over prediction of natural births in the Planning Department's projection will not, however, materially affect the household projection to 2001 since only few children born during 1981-2001 will be reaching the age of first household formation by the end of the projection period. However, should reduced fertility prevail, this can be expected to further steepen the projected trend to reduced rates of new household formation post 2001 (i.e. there would be a reduced number of persons in post 1981 cohorts available to form new households post 2001).

With regard to deaths, the 725,000 projection is based on a continuation of an overall decline in mortality rates, based on rising longevity (for adults over 55) and declining infant mortality; but no change from the relatively high incidence of accidental and violent death of young adults. The age-specific death rates used in the projection were prepared for the Planning Department by the Ministry of Treasury and Economics. This trend to declining mortality is confirmed by the Census Bureau of the USA which predicts a decline through to 2005 and then a levelling off (by which time health care gains will be consolidated).

Although no evidence has been uncovered which disturbs the direction of these projected trends in mortality rates (i.e. downward) it is important to caution that the household projection (flowing from the population projection) is somewhat sensitive to change in adult longevity. Seniors account for the fastest growing segment of the population projection (and the household projection), nearly doubling in number by the turn of the century.

The strength of this growth, though largely a function of the population's age structure, is also somewhat dependent on the assumption about increasing adult survivorship (i.e. in so far as it affects the accumulation of seniors within the population).

Net In-Migration

This is the second component of population growth (the excess of migrants to the Region over those moving away). Between 1971 and 1981 the net was approximately 3,000 per year (average) in favour of movement to the Region (of which 70% was inter-provincial and 30% was inter-national in character). It should be noted that net in-migration during the 1971-81 period accounted for approximately one half of the total population increase.

What causes positive (net) migration and influences its magnitude? Basically it is the relative ability of the Region to (a) attract new migrants to the Region and (b) retain them once they arrive - both of which rely upon job availability. Some of the new jobs which attract/retain migrants are "basic" in nature (jobs related to goods and services exported from the Region) while others are "non-basic" (jobs related to goods and services consumed within the Region).

Basic jobs are created in response to an expansion in the national or global economy or the creation of new products which can successfully compete for a larger portion of the available market. Both conditions can lead to an increased demand for those goods and services which are exported from the Region. An example would be jobs in the Region's electronic manufacturing firms which produce equipment sold elsewhere in Canada and the world.

This Region's largest basic employers are the federal government (which exports administrative services to the rest of Canada), the so-called high-technology establishments (which export hardware and software products), and the hospitality industry (tourism, conventions etc. whose services are consumed by non-residents) - all of which expanded significantly through the 70s and into the early 80s. As a point of reference, during the decade 1970-1980, Ottawa-Carleton posted the highest rate of job formation of any urban region in Ontario - accounting for the net inward migration.

In contrast, non-basic jobs are created in response to growth in population within the Region or to an increased level of demand for goods and services created by the existing population.

The employment projection which underpins the Regional Official Plan review considers future growth prospects for both the basic and non-basic sectors. The projection for the 725,000 threshold assumes a moderate expansion of federal employment (2.0% per year)*, a continuation of the growth trend in high-technology businesses, and expansion of the hospitality industry. The non-basic employment is assumed to expand more-or-less in proportion to household growth.

*During the period 1960 to 1981, growth in Federal Government within the National Capital Region averaged 3.6% per year.

Based on the foregoing assumptions and after accounting for levels of unemployment (assumed at 5%), multiple job holding (assumed at the national average of 4%), and a rising labour force participation rate (assumed to stabilize at 73% by 2001) it was determined that a net in-migrant stream of 6,000 migrants per year could be supported (i.e. attracted and retained) within the Region. This rate of 6,000 net in-migrants mirrors the experience of the period 1971-1976.** Migrants would account, therefore, for approximately two-thirds of the population growth which is projected to occur between the 1981 level of 547,000 and the 725,000 threshold (at 2001). [Beyond the threshold, migration could account for upwards of 80% of all future population growth].

It is important to remember that the net migration stream is a product of "ins" minus "outs". The net (in the case of RMOC through the late 70s and early 80s) represented something in the order of a 10% to 20% residual of the total in-and-out movement.

Because migrants are expected to be the predominant force giving rise to population (and household) expansion to the turn of the century and beyond, the household characteristics of these migrants will shape the overall housing demand.

Broadly speaking, the age profile of the in and out migrants has been similar for the past decade and a half. Through the late 70s and early 80s, approximately 85% of all migrants, both in and out, were 44 years or younger - approximately half the total were ages 16 to 44. However, there has been a tendency, through the exchange of "ins" and "outs", to replace the 45-64 year group on a one-for-one basis while persons 65 years and older are replaced on a two-for-one basis. (Some of the projected growth in the 65+ group therefore, is due to net in-migration of seniors).

The population and household projections which underpin the official plan review (i.e. the 725,000 threshold) are based on the premise that the Region will continue to have a high rate of exchange of migrants - with an average net residual of +6,000 per year; that 85% of this residual will be persons aged 44 years or less; and that the balance (15% of the 6,000 net migrants) will be highly biased towards the 65+ age group. Taken together, these assumptions indicate that the housing requirement to the turn of the century will be strongly influenced by the demands made by an influx of persons less than 44 years and those of a senior age.

The foregoing are the basic demographic and economic assumptions which support the household projection (discussed below). The projections also assume (tacitly) that there will not be major wars, epidemics, nor politically induced waves of immigration. Though not argued anywhere, these are common assumptions of most projection exercises.

Summary of Population Projection

The results of the foregoing assumptions are given below in Figure 1, which presents the population projection by age group for the 725,000 threshold (at 2001) - plus an extension of this projection to 2011 to indicate likely further changes in the age structure post 2001. The overall growth rate for the period 1981-2001 resulting from the projection in Figure 1 is 1.40% per year (average). This compares to the average annual growth rate of 1.5% per year from 1971 to 1981.

**note, net in-migration for Ottawa-Carleton based on 1981-1984 data averaged 8270 migrants per year. Of the total, 72% came from other areas of Ontario, and 88% were aged 44 years or younger.

FIGURE 1: OFFICIAL PLAN REVIEW POPULATION PROJECTION*
(net migration assumed at +6000 per year)

AGE	1981	1991	2001	2011
0-14	109,582	119,242	124,421	116,151
15-24	105,187	87,922	88,974	99,522
25-34	102,044	122,738	108,898	108,101
35-44	72,620	111,224	130,696	118,114
45-54	58,519	74,696	111,951	130,632
55-64	50,255	56,510	71,175	105,597
65+	48,626	70,946	88,612	109,314
TOTAL	546,833	643,278	724,727	787,431
NET DIFFERENCE (+ and -)				
AGE	1981-1991	1991-2001	2001-2011	
0-14	9,660	5,179	- 8,270	
15-24	-17,265	1,052	10,548	
25-34	20,694	-13,840	- 797	
35-44	38,604	19,472	-12,582	
45-54	16,177	37,255	18,681	
55-64	6,255	14,665	34,422	
65+	22,320	17,666	20,702	
TOTAL	96,445	81,449	62,704	

As can be seen from Figure 1, the projection to 2001 indicates a modest growth for the age group 0-14, a decline for those aged 15 to 34; a large amount of growth in the age groups 35 to 54, a smaller amount of growth for those aged 55-64; and a near doubling of those aged 65+ (although the numerical increase of seniors is less than one third the growth of the combined middle-age groups). The age structure continues to mature post 2001; and the overall growth rate continues its decline.

Before leaving this section of the paper it should be re-emphasized that the magnitude and age profile of the net in-migrant stream dwarfs all other assumptions** (such as potential changes in mortality or fertility rates). Although it is clear that the magnitude of the net in-migrant stream is tied directly to the expansion of the economy (i.e. the rate of job creation within the Region), there is a small component of the in-migration (approximately 15%) which is not related to job growth at all (i.e. seniors).

It would appear, broadly speaking, that young adults (and their children) move to and from the Region in response to job opportunities (or perceived opportunities) and under the projection there is a net increase in favour of the "in" movement. For the upper end of the middle aged (45-64), "ins" balance "outs". For seniors, there is a strong net movement into the Region - this movement presumably not related to job opportunities but perhaps more to life style attributes.

*Projection updated December 1984.

**Assuming that the entire Canadian population ages in a similar fashion, the source of youthful migrants (i.e. those 44 years and younger) may have to become more international in character than has been the case over the past two decades. In other words, there may not be a sufficiently large pool of Canadian migrants to feed a +6000/year stream to RMOc.

REVIEW OF THE HOUSEHOLD PROJECTION

The next step in this paper is to review how the population projection is translated into a projection of households.** The number of households that will be formed is a function of three parameters: the number of adults in the population (here defined as ages 15 and over); their desires towards forming (or maintaining) households of various characteristics; and their financial capability to achieve these desires.

The number of adults has been projected - as given above in Figure 1. That takes care of the first parameter.

The future attitudes (desires) of the projected population to form households of various characteristics - the second parameter - is a somewhat complicated study in itself; but is generally approached in the following manner. First, the projected population is broken down into basic age groups and then the propensity (probability) of any individual in each particular age group to form (i.e. be the "head of") a household is predicted. These predictions take the form of "headship rates". For instance, in 1981, of 105,200 persons aged 15 to 24 in RMOC, 16,840 (16%) were heads of households.

The projection method which has underpinned the official plan review to date is typical of many other projections in that it uses age groups and age-specific headship rates to generate the household projection. Further, the method is based on holding the headship rates, for each age group, constant at the 1981 levels. This, for instance, assumes that any individual young adult (aged 15-24) in 2001 will have the same likelihood of being the head of a household as they did in 1981 (in this example, 15.5%).

This assumption truncates a trend to increasing headship rates that has been underway since the 60s. In this regard, one of the criticisms of the Regional projection (i.e. that it simply maintains trends) is quite incorrect. The Regional projection is a significant truncation of the long term trend to increasing headship rates - stopping the trend (short?) at 1981 levels.

Although this single assumption (i.e. constant headship rates) attracted a fair amount of discussion and criticism (during the public consultation process of the strategy discussion paper) - it is not an uncommon approach. For instance, a projection (to 1991) published in February 1984 by Clayton Research Associates Limited for the Housing and Urban Development Association of Canada is based on constant 1981 headship rates. And, this assumption is also shared by a recent projection (to 2021) prepared by the City of Toronto Planning and Development Department (published February 1985).

This can be contrasted with four earlier projections - which all assume increasing headship rates (though they vary in the rate of increase). The CMHC projection (1978) and the J. Miron projection (University of Toronto, 1979) assume that headship rates will increase but the rate of increase will dampen down over time. The Statistics Canada projection (1975) and the Peter Barnard Associates projection (1977) assume that the headship rate will increase to 1986 and then remain constant. [A revised projection for the period 1976-2001 prepared by the Market Forecasts and Analysis Division of CMHC in 1981 is also based on increasing headship rates which dampen over time].

**A household is either a single person or group of persons (related or not) that occupy a separate set of living quarters ("dwelling unit"). There is one household per occupied dwelling unit; and each household has only one household head.

The household projection for the 725,000 threshold which has been the basis of the official plan review (to date) is presented in Figure 2 (below). In Figure 2, this projection has been extended to 2011 to illustrate post 2001 conditions.

FIGURE 2 HOUSEHOLD PROJECTION BASED ON 1981 HEADSHIP RATES
(Numbers of Households)

AGE OF HOUSEHOLD HEAD	1981	1991	2001	2011
0-14	0	0	0	0
15-24	16,840	14,075	14,244	15,933
25-34	52,603	63,270	56,139	55,726
35-44	39,991	61,250	71,988	65,034
45-54	33,068	42,210	63,276	73,820
55-64	29,036	32,650	41,149	61,014
65+	28,951	42,240	53,113	65,086
TOTAL	200,489	255,695	299,909	336,613
NET DIFFERENCE (+ and -)				
AGE	1981-1991	1991-2001	2001-2011	
0-14	0	0	0	
15-24	- 2,765	169	1,689	
25-34	10,667	- 7,131	- 413	
35-44	21,259	10,738	-6,954	
45-54	9,142	21,066	10,544	
55-64	3,614	8,499	19,865	
65+	13,289	10,873	11,973	
TOTAL	55,206	44,214	36,704	

The household projection (given in Figure 2) will not be described here except to note the overall declining rate of household formation (from 5,520 per year in the 80s to 3,670 per year post 2001) and the shift of growth into the older age groups over time.

This paper, drawing upon recent literature, will now briefly review each age group to reveal factors or forces that may be at work which would substantially upset the basic assumption of the Region's household projection (i.e. that of holding age specific headship rates constant at 1981 levels).

The following review relates somewhat to the third parameter listed above --that being the degree to which the future population will be able to express (i.e. afford) their desires regarding household formation.

However, since the population projection discussed herein is predicated on moderate levels of economic expansion, the force behind the net in-migrant stream, it would be inconsistent to match that population projection with a pessimistic view about the number of jobs (wages and salaries) that will be available to support household growth. Therefore, the following review looks more to cultural or social factors which may be at work in parallel with the assumption of a reasonably robust economy (although recognition is given to the possibility of economic hardship in the youngest age group).

The review which follows is structured around five principal age groups which are often discussed in housing research articles. First are the young adults - aged 15 to 34 - who typically exhibit a rapid increase in headship rate with age, and a switch over from non-family households (typically single person households) to family households (married couples, or married with children) by the time they reach early 30s.

Then there are households with a head who is middle-aged (35 to 54), which exhibit relatively high headship rates and relatively homogeneous household characteristics (typically married couples, with or without children; although there is an increasing proportion of single person and single parent households).

Then there are the older middle-aged (55-64) who are singled out for discussion solely due to recent interest in the so-called "empty nester" phenomenon. This group really is a sub-set of the middle aged. (Note, other studies refer to the 45-54 or 45-64 group as empty nesters).

And finally there are the seniors (aged 65+) who have attracted a large amount of attention due to the recent rate of increase in this group; triggering speculation about the sort of housing choices this group will be making in the future (a common precept being that this group is "overhoused").

(The 0-14 year group is not discussed as they do not head up households).

Cutting across several, if not all, of these age groups are trends in factors such as marriage/divorce/remarriage which influence the number of single person (and single parent) households which are formed. These trends are best discussed by age-group however since their effect is more or less pronounced depending upon the age group in question.

The basic purpose of this review is to identify what, if any, evidence exists in the reviewed literature to suggest that the 1981 headship rate should be varied (up or down) and whether a revised household calculation is in order. And in this regard, the key group to watch is the middle aged (35-54) since this group will account for approximately two thirds of the projected population growth to 2001 (and over 60 percent of the projected household growth). A small change in the headship rate assumption for this group will alter the total household projection substantially. The seniors (65+) are another key group accounting for one quarter of total household growth. In contrast, fairly substantial changes in the headship rates of young adults (15-34) and empty nesters (55-64), while of interest, would not materially affect the total number of new households that will be formed.

At the end of the discussion on each age group a "best guess" of the most likely change in headship rates is presented (direction and magnitude). And at the very end of this section of the paper these "best guesses" are put together and a re-calculation of the household projection is presented. A comparison to the existing projection, which uses constant 1981 headship rates, completes this section.

[Questions relating to the kind of housing units that might be occupied by the various age groups will be reserved for the third part of this paper - below we are just talking about the rate of household formation].

Young adults (15-34). Headship rates for the 15-24 age group increased markedly through the early 70s (from 11.4% in 1971 to 16.0% in 1976) and then stabilized (at 16.0% in 1981). See Figure 4 at page 11. During this time there was a concomitant increase in the proportion of single person households and other non-family households in this age group. By 1976 over one half (55%) of these households were non-family - largely single person households. This age group has in fact, posted, by far, the highest rate of increase in single person household formation. The major reasons for the sharp increase in the rate of household formation appear to be early home leaving (which to a considerable extent is dependent upon the relative affluence of youth) and a trend towards later marriage. Some of the recent articles in the American literature suggest that headship rates for the under 25 year group will continue to rise tied to rising affluence and a return to the historic levels of singlehood which prevailed all through this century (interrupted by three decades of high marriage rates - mid 40s to mid 70s). Other articles are much less optimistic and predict declining headship.

The assumption about rising affluence (and headship rate) is difficult to swallow. Since unemployment among young adults appears to be a problem that will have considerable duration (regardless of the strength of the economy) it seems somewhat unlikely that headship rates for this group in Ottawa-Carleton will rise. It has been suggested that a larger proportion of young people will stay home (especially since many of the 15-24 year olds are the last child to leave baby boom families). It also seems likely that there will be a continuation of the trend to postponed marriage. For those that do leave home it is more likely that there will be a tendency away from single person households towards the formation of mixed-single households (i.e. doubling up with a house-mate as mixed singles with perhaps two (small) incomes to support the household). Although this indicates a shift away from married couples to so-called "mingle" households (mixed singles) this second effect on the headship rate would be minimal since related couples are simply being replaced by unrelated pairs.

On balance, maintenance of the 1981 headship rate (16.0%) - or a further increase - cannot be supported as the basis of future projections for this youngest age group (15-24). [For the purposes of a revised projection the headship rate will be adjusted downward to a level of 14.0% to indicate the effect of continuing high levels of youth unemployment and a reduction in single person households].

For the 25-34 age group, headship rates continued to increase unabated through the early and mid 70s (coupled with a sharp increase in the proportion of non-family, largely single-person households) from 46.9% in 1971 to 51.6% in 1981. Although the frequency of marriage in this group is twice that of the 15-24 year group, there has also been a near doubling in the proportion of persons in this age group who remain unmarried. And for those that do marry there is an increase in the rate of divorce. The American literature suggests a further increase in the proportion of single person households in this age group.

Since this group is much more likely to be fully employed than the under 25 year group (i.e. better able to economically support households) and based on trends towards delayed marriage, increasing divorce and the relatively smaller tendency towards forming mixed-single households, it is judged that a further increase in headship rate is most likely. [For the purpose of a revised projection, the headship rate will be increased to 52.8% (half the increase between 1976 and 1981)].

Middle Aged (35-54). In this group, the 35-44 year olds experienced a large increase in headship rates all through the 70s from 51.1% in 1971 to 55.1% in 1981. Headship rates for the 45-54 segment of this group did not rise much in the early 70s, but did increase sharply to 56.5% by 1981. The American literature suggest there will be a further increase in single person and single parent households within this group - largely through further increases in the divorce rate. In general, females will have higher levels of education and work experience (than in previous decades) and the number of children in families will be relatively small - both of which make employment more likely and the support of a separate household more manageable. However, it is expected that the forces driving an increasing divorce rate will diminish and remarriage rates will climb. The extent of further increases in headship rate are not expected to be dramatic.

[For the purpose of a revised projection, a further increase in headship rate (equal to one half of the increase from 1976 to 1981) will be used. This gives a rate of 55.9% for the 35-44 age group and 57.9% for the 45-54 age group].

Empty - nesters (55-64). This age group - which historically has had a high headship rate - experienced only a modest increase in rate from 1971-76 and then a small decline from 1976-81. In 1981 the headship rate was 57.8%. This group is more of interest from the point of view of what type of housing they may occupy (when the children leave home) than from any great expectation about changes in their rate of household formation. As retirement approaches one might speculate that the desire to establish/maintain separate (single person) households would diminish making divorce less likely (and perhaps remarriage more likely?). Further, with improved health care there should be fewer widows in this age group than in the past.

[On this basis it is concluded that there is no strong evidence to argue any adjustment to the 1981 headship rate for this group].

Seniors (65 yearst+). This group has the highest headship rate - and posted the largest gains of any group during the early 70s. A major part of this increase was due to the increase in single-person households. The rate then only increased marginally to reach 59.5% by 1981. With the advent of mandatory pension plans and a high degree of (previous) home ownership, it could be expected that in future seniors will have increased financial ability to maintain households (separate from their families). Improvements in levels of health and non-institutionalized health care should also put an upward pressure on headship rates for this group. Unlike young age groups, the formation of single-person households in the elderly is not as sensitive to changes in economic circumstances - hence there is not the same rationale to forecast a decline in the single person rate.

Offsetting these trends, there will be a rising proportion of the 65+ group who are quite advanced in age (i.e. the age profile of the seniors will include more and more of the very elderly (80+) to 2001 and beyond). The very elderly are most likely to give up maintaining separate households - either returning to their families or to some form of collective (institutionalized) dwelling.

On this basis, although it is most likely that the high rate of headship - for the 65+ group as a whole will be maintained, further increases will be quite small. [For the purpose of the revised projection the headship rate for seniors 65+ will be increased marginally by 0.7% to 60.0%].

A summation of the foregoing discussions is presented in Figure 3. Here the 1981 age-specific headship rates are given beside the suggested revisions to headship rates (i.e. slight modifications to the 1981 rates). Also shown for comparison are 1981 headship rates for four other metropolitan areas in Ontario.

As can be seen from Figure 3, the 1981 headship rates for Ottawa-Carleton are broadly similar to the 1981 rates for other metropolitan areas in Ontario (which had different sizes, growth rates, and economic performance). Further, it can be noted that the revised rates postulated herein for Ottawa-Carleton are still within the ranges of those which have been experienced in other communities.

FIGURE 3: HOUSEHOLD PROPENSITIES (AS %); SELECTED ONTARIO METRO AREAS 1981*

AGE GROUP	TORONTO	HAMILTON	KITCHENER	LONDON	RMOC	RMOC (2001)	PROJECTED
0-14	-	-	-	-	-	-	-
15-24	11.8	13.3	17.1	20.3	16.0	14.0	14.0
25-34	47.5	48.6	50.8	52.5	51.6	52.8	52.8
35-44	54.7	53.3	54.7	55.2	55.1	55.9	55.9
45-54	55.7	54.6	55.2	55.8	56.5	57.9	57.9
55-64	55.6	56.7	55.4	57.4	57.8	57.8	57.8
65+	56.8	61.1	59.9	60.8	59.5	60.0	60.0
TOTAL (15-65+)	43.6	44.5	45.1	41.1	45.9	50.3	50.3
*DERIVED FROM 1981 CENSUS OF CANADA							-

Figure 4 gives age-specific headship rates for RMOC for 1971, 1976 and 1981 which clearly highlights the general growth in headship rates through the 70s. This illustrates the degree to which the assumption behind the published household projection (which is based on constant 1981 headship rates) actually represents a significant truncation of the trend to increasing headship rates which prevailed all through the 70s.

FIGURE 4: HEADSHIP RATES IN OTTAWA-CARLETON

AGE	1971	1976	1981	2001 (PROJECTED)
0-14	0	0	0	0
15-24	11.4	16.0	16.0	14.0
25-34	47.0	49.2	51.6	52.8
35-44	51.0	53.5	55.1	55.9
45-54	53.4	53.9	56.5	57.9
55-64	56.6	58.1	57.8	57.8
65+	53.1	59.1	59.5	60.0
TOTAL	29.4	33.4	45.9	50.3

Based on the projected age-specific headship rates, as given in Figure 4 a revised household projections has been prepared for RMOC (Figure 5). Two projections are then compared in Figure 6. One projection is based on the 1981 headship rates (i.e. the Official Plan Review). Beside it is the revised projection which is based on the modified age-specific headship rates (as discussed above).

FIGURE 5: REVISED HOUSEHOLD PROJECTION

AGE	1981	1991	2001	2011
0-14	0	0	0	0
15-24	16,840	12,309	12,456	13,933
25-34	52,603	64,793	57,487	57,066
35-44	39,991	62,163	73,045	66,013
45-54	33,068	43,263	64,842	75,662
55-64	29,036	32,650	41,125	61,013
65+	28,951	42,567	53,167	65,588
TOTAL	200,489	257,745	302,122	339,275

While the revised projection (in Figure 6) shows a major reduction in households for the 15-24 year group (down approximately 13%), there are off-setting increases in the middle age groups. The net difference is not significant (i.e. an increase of 2,213 households, or .07%).

Based on the foregoing review the published household projection (derived from 1981 headship rates) can still be supported in its total number (approximately 300,000 households at 2001). However the published projection may be over-estimating the number of young households and under-estimating the middle-aged households.

FIGURE 6: COMPARISON OF PUBLISHED AND REVISED HOUSEHOLD PROJECTION (at 2001)

AGE	BASED ON 1981 HEADSHIP RATES	BASED ON REVISED HEADSHIP RATES	DIFFERENCE (+ or -)
0-14	0	0	0
15-24	14,244	12,456	-1,788
25-34	56,139	57,487	1,348
35-44	71,988	73,045	1,057
45-54	63,276	64,842	1,566
55-64	41,149	41,125	-24
65+	53,113	53,167	54
TOTAL	299,909	302,122	+2,213

Conclusion

The method to project households used to date in the Official Plan Review is consistent with current practice elsewhere. Further, the critical assumption of maintaining headship rates constant at the 1981 levels is shared by other recent projections produced by consultants and planning agencies - whereas older projections assumed substantial further increase in headship rates.

A careful review by age group suggests that one might reasonably expect a future decrease in headship rates for young adults, and small increases for the middle-aged and the elderly. A household projection based on revised headship rates would yield little change in the overall number of new households produced by 2001 but there would be a shift away from younger to middle aged households.

This paper concludes that the revised projection is preferred as the basis for future Official Plan work since it recognizes that some force remains in the long-term past trend to increasing headship rates in the middle age group and cuts back on the number of younger aged single person households (whose rate of formation is quite sensitive to economic circumstances).

HOUSING REQUIREMENTS

The final section of this paper takes the (slightly) revised household projection and disaggregates it into household groups (by age of household head). This disaggregated projection is then explored in relation to the present and future relationship between household group and housing unit "requirements" (by structure type).

This section, like the foregoing, proceeds on the basis of discussing each age group in turn - with a prediction given in brackets concerning future housing unit demands by type of structure.

It should be underlined that, unlike the comments made above on possible changes in household formation rates which the literature has shown to be related to changes in some key demographic or economic parameters, the comments given below with regard to possible changes in housing occupancy patterns (i.e. type of structure) are more speculative.

For instance, there is solid evidence that household formation rates of the youngest age group - especially with regard to the rate of single person household formation - is sensitive to income change. (Hence the prediction that there will likely be a decline in this group's headship rate tied to persistent levels of youth unemployment). Other examples would be the impact of rising divorce on headship rates in the middle age groups.

In contrast, there are fewer hard facts about housing preferences and how these relate to changing social and economic conditions. Except for a few studies, most insight into housing preference has to be inferred from housing occupancy data. There is then the large problem of deciding the degree to which housing is occupied according to preference - as against occupancy which is dictated by a lack of choice available within the housing stock. However, it is reasonable to expect that over the long haul the tension between supply and demand would sort out most supply problems (that are not related to a lack of income). This would suggest that - apart from income limitations - occupancy patterns can be relied upon to express housing preferences, in a general way, over a long time horizon.

Most of the available research in this area is based on the notion of a reasonably predictable housing cycle, starting with the formation of a first household as a young adult, either as a single person or a mixed single - usually in an apartment; followed by family formation - and a move most often to ground-oriented accommodation; and then in some cases, a move back to a multiple unit structure at a later stage. This is unquestionably a generalization, to which there are many individual exceptions. The reason for raising it is simply to highlight the general concept of linking household type to housing "requirement" and that there is a demographic basis to housing requirements.

At the end of this section all of the predictions are consolidated to present a projection of housing requirements (by housing type).

Young adults (15-34). During the early 70s, the headship rate for the 15-24 age group increased 41%, but the non-family segment (i.e. single person and mixed singles) grew by 93% (single person households grew by 121%). By 1976 these trends all stalled. In a previous section it was argued that headship rates will fall back again.

It is further predicted here that the decrease in headship rate will be partly a result of reduced interest in early home leaving and a reduced ability to form a single person household. It is also predicted that the increasing trend to delayed marriage will persist. Therefore, it is predicted that the proportion of single person households will sharply decline producing a smaller number of households which will increasingly comprise combined (i.e. mixed single) households.

In terms of housing unit type, this age group typically occupies multiunit structures and it is assumed this will generally prevail into the future.

One should note however that during the period from 1976 to 1981 - a period when there was a distinct shift to non-family households for this group, there was a 7% shift away from apartments to low rise multiples and single detached housing. Some part of this shift may have been "program driven" in the sense that a large number of AHOP units became available during this period while apartment construction declined. There was also a concomitant small decline in the proportion who rented as opposed to those who owned.

[For the purpose of the housing unit projection it is assumed that, based on the possibly deteriorated economic situation of young people, the housing requirement will shift back to the 1976 level of apartment occupancy at 77%, with 18% in low rise multiple units and 5% in single detached. Basically this represents a shift from single detached to apartments, with only a minor decrease in low rise multiples. In 1981 the corresponding ratio was 72:19:9]

For the 25-34 year old group, the trends in household type through the 70s were the same, but less pronounced, than for those of younger ages. Overall headship rates climbed approximately ten percent but this was accompanied by a marked shift away from family households to non-family households (due to postponed marriage and divorce). And, this age group was much more prone to forming single person households. It has been argued in the previous section that these trends to increasing headship rate will continue - but with reduced force.

Compared to the younger group, the 25-34 group occupied apartments much less frequently - but also at declining rate (from 42% in 76 to 40% in 1981). There was a similar small decline in the occupancy of single detached from (28% in 1976 to 26% in 1981). These two trends combined to produce an increase in the occupancy of non-apartment forms of multiples. This confirms discussion in American literature which highlights the increasing likelihood of young couples occupying townhousing (as a second choice to single-detached due to affordability problems). There is a parallel trend in the USA to increasingly provide these units as rentals with an option to purchase. In Ottawa-Carleton, the overall occupancy of rental for this age group increased from 60% in 1976 to 63% in 1981.

[For the purpose of the housing unit projection, it is assumed that the trend away from both apartments and single detached will continue - in favour of multiples according to the following ratio: apartments 36%, multiples 40%, single detached 24%. In 1981 the corresponding ratio was 40:34:26].

Middle Aged (35-54). This group has behaved much like the former group (25-34), exhibiting sharp increases in household formation during the 70s, although this group has a much higher tendency towards family household formations. Notwithstanding a rather stable rate of family households - an increasing proportion of these were single-parent households. At the same time there was significant growth in single person households (both being results of an increase in the rate of divorce).

With regard to structure type the middle-age group has always exhibited a high rate of single-detached occupancy (49% of 35-44 group and 56% of 45-54 group) - although there was a small decline from 1976 to 1981. And, although apartment occupancy is low (approximately 21%) it also declined a small amount. It is important to underline here that the increase in single person households did not trigger an increase in apartment occupancy. However, like the foregoing group (25-34), the middle aged increased their occupancy of non-apartment multiples, a tendency which is more pronounced in the 35-44 group than the 45-54 group. This may have been a result of smaller family size, or economic circumstances resulting from divorce (i.e. single person and single parent households). But unlike the 25-34 group, this switch to low rise multiples was also accompanied by a decline in rental in favour of ownership.

As a rough generalization, the middle aged group is one half as likely to occupy an apartment but twice as likely to own it as their younger counterparts; they have a similar occupancy pattern for non apartment multiples (though more inclined to ownership); and are almost twice as likely to occupy single-detached units.

[For the purpose of the housing unit projection it is assumed that these tendencies will continue, with a continued shift into non-apartment multiples, so that housing is occupied in the following ratios: - for the 35-44 group, apartments 21%, multiples 32%, single detached 47%; and for the 45-54 group, apartments 21%, multiples 27%, single-detached 52%. The corresponding ratios in 1981 were 19:31:50 for the 35-44 group and 21:23:56 for the 45-54 group].

Empty Nesters (55-64). The trade literature is currently full of speculation about this age group: the basic assumption being that the children of these families have left home (of which there was an unprecedented number); there is therefore a mismatch between household size (the remaining two parents) and the dwelling unit (most likely a large single detached); and there is a desire for the "empty nester" couple to move to smaller accommodation. Further, there seems to be an assumption that these empty nesters will flock, from the suburbs, to high amenity condominiums (both high and low rise) near the city centre.

And it appears that there is some merit in this theory - but not a lot. First there is not a large proportion of true "empty-nesters" in the sense that most often not all of the children have left (or more likely one or more of the children have gone through one or more episodes of leaving and returning home). Further, it is becoming more likely that persons of this age group have one or more of their parents still living and who may form part of the (not so empty-nest) household.

Second, these households do not have a high tendency to move (the tendency to move declines sharply with the age of household head).

Third, of those that do move, the majority are already renters, and typically they move to other rental accommodation. There is only a small proportion of owners who switch to rental accommodation.

Fourth, of those that do that move, some downsize the amount of space they occupy; but more often they upsize (perhaps based on there being more income available to spend on housing when the children are gone?). The most frequent reason cited for moving (in one of the few published studies*) is to increase living space. Another chief reason for moving is to obtain a better quality unit and a better neighbourhood.

The foregoing has been presented to sketch out what is known about empty nesters - but one should not lose sight of the fact that a large proportion of the 55-64 year olds are not empty nesters at all.

Taken as a whole, the 55-64 group, exhibited a very stable pattern of headship rates through the 70s with only a very slight shift in the proportion between family and non-family households. In 1981, families made up 73% of all households in this age group. Like the younger middle aged groups, over half this group occupied single detached homes in 1981 - and unlike the younger group this tendency increased by a small amount (from 52% in 1976 to 54% in 1981). The occupancy of apartments, though higher than for the younger middle-aged, declined a bit more steeply from

*John Miron and Myra Schiff, A Profile of the Empty Nester Household, Jan. 82.

33% in 1976 to 30% in 1981. And like their younger counterparts there was a increase in the occupancy of non-apartment multiples (from 14% to 16%). Like the younger aged groups, there was a movement away from rental to ownership (from 39% in 1976 to 35% in 1981). On balance this group has a stronger bi-modal occupancy pattern than other middle-age groups (ie proportionately more single detached and more apartments with correspondingly less in the middle density category).

Looking into the future, several things seem apparent. First, there will be substantially fewer children born to families - and children may be born later. Second it will be more likely that there will be two income earners in these families (as female participation rates continue to climb). Third, and based on the foregoing, of all age groups the 55-64 year old households may have the largest number of options available to them (i.e. the financial resources to stay in a single detached, or move to a high amenity apartment or townhouse). However the tendency to move at this age is quite low. It may be the case that little change in housing is precipitated until retirement arrives at which time housing options are most likely to be reviewed. This argues for relatively stable patterns of occupancy for the pre-retirement part of this group - but highlights that substantial movement may be in store for the post retirement age group.

[Based on past occupancy patterns and the recent (but slight) shifts to single detached and non-apartment multiples (i.e. accompanied also by a shift to ownership), for the purpose of a future projection the following ratio will be assumed: apartments 27%, multiples 18%, and single detached 55%. The corresponding ratio in 1981 was 30:16:54].

Seniors (65+). Of all age groups, this group exhibited the most stable housing occupancy patterns over the period 1976-81 - even though the increase in proportion of non-family households (largely single person households) was substantial. In 1971, 46% of senior headed households were non-family. By 1981, this proportion grew to 53%. Most of this growth was due to the rapid rise in single-person households.

Just over one half of senior headed households occupy apartments (51% in both 1976 and 1981) - the surprising aspect of this is that there has not been an increasing trend toward apartment occupancy to accompany the rising trend to single-person households (this appears to run counter to popular belief). The proportion of multiple, non-apartments (at 10%) and single detached (at 38%) did not change either during the period 1976-1981.

As argued earlier, it is not expected that the headship rate for this group will change much (an increase in headship for the younger elderly will be off-set by an increase in the number of very elderly who have low headship rates). And, it is not clear why there might be a basic change in their occupancy pattern (which remained very stable through the late 70s notwithstanding the rise in single person households).

However, looking into the future it is apparent that there will fairly large cohorts of retiring middle-aged households (with considerable equity, pensions from two income earners, and few dependants) sustaining the growth of senior aged households. It seems that the "new" seniors in the 80s and 90s will have better health, more wealth, and more income. And, upon retirement there is no need to locate close to work. In short, seniors will have increasing freedom to choose their housing arrangements.

In the past as the post retirement cohort reached senior age, there was a strong cross-over from single-detached to apartments - with relatively little interest shown in non-apartment multiples.* In the literature there are no strong statements about the future choices of the seniors - except to say the market will be highly fragmented. Interest in items such as security, low maintenance, and single-level living, combined with increased levels of wealth and income, however, do argue for the occupancy of apartment units with many amenities (and probably of large size).

[Based on the foregoing, it is assumed that in the future there will be a small increase in the proportion of seniors occupying apartments (either rental or condominium), no increase in multilevel multiples, and a small decrease in single detached - giving the following ratio: apartments 55%, multiples 10%, and single-detached 35%. The corresponding ratio in 1981 was 51:11:38. (Though not particularly relevant to the immediate discussion, it is also likely that the apartments occupied by the new seniors will increasingly be spacious and more amenity laden)].

As a summary, the shifts in occupancy by unit type for each group are given below:

FIGURE 7: OCCUPANCY PATTERN (as %)						
1981				2001 PROJECTED		
Age	Apt	Multl	S. Detach	Apt.	Multl	S. Detach
0-14	0	0	0	0	0	0
15-24	72	19	9	77	18	5
25-34	40	34	26	36	40	24
35-44	19	31	50	21	32	47
45-54	21	23	56	21	27	52
55-64	30	16	54	27	18	55
65+	51	11	38	55	10	35

*note, ten percent of RMOC seniors occupy multiple (non-apartment) units - which is the upper limit currently forecasted by American literature.

Other Trends. Cutting across several age categories are two underlying trends which have already been accounted for in the discussions of each age group - but are pulled out here for further (focused) comment.

First, there is the increasing proportion of non-family households (from 21% in 1971 to 28% in 1976 and 31% in 1981). This increasing proportion is directly linked to the emergence of the single person household as a significant component of household growth through the early and late 70s. Interestingly this did not trigger a proportionate increase in the rate at which apartments were occupied during the late 70s. But, it is not clear the degree to which this was controlled by availability of apartment units.

The proceeding discussions have suggested that the formation of young single person households will decline (in favour of an increasing proportion of mixed single households) due to persistent unemployment in this age group even though the high projection assumes substantial employment growth. Of those that do form, it is assumed herein that an increased proportion will occupy apartments due to the complexities of home ownership for mixed-singles.

For the middle age groups the growth in single person households is largely a function of an increasing divorce rate - which is predicted to increase a little further yet. The basic change in housing occupancy predicted here is a further (but slight) shift away from single-detached to non-apartment multiples for those aged 25-54. The proportion of apartments has not been and is not expected to rise. A consumer audit published by Multi-Housing News (a US publication) in 1983 listed the housing preferences of singles as follows: single-detached 42%, townhouses 23%, other low rise multi-units 24%, and apartments - a bare 11% (over 40% of the audit sample were singles aged 21 to 39). It cannot, therefore be comfortably assumed that there are large numbers of middle aged singles not now occupying apartments that would prefer to do so if such were available.

For seniors, it is projected that there will be an increase in the proportion occupying apartments - largely due to the increasing number of singles in this age group and a desire for secure, single-level accommodation.

Overall, the proportion of single person households is projected to rise from its current 25% to something just less than 30% by 2001; due to increases in the 25-55 and 65+ age groups.

A second, companion trend is the decreasing proportion of family households. And, of the family households that do form there will be a further decline in family size as a result of declining fertility and the rise of single parent families (especially for the age groups 25 to 54 where single parenthood is a second result of rising divorce rates). On the surface, the projected decline in family size would seem to argue for smaller dwelling units.

However, the impact of declining family size should not be overstated. It should be pointed out that the future decline in family size will nowhere match the decline through the 70s - at which time the shift away from single detached was quite modest. Further, there will be an increased likelihood that future (somewhat smaller) families will be supported by two income earners with presumably more income to spend on housing. And, it is significant to note that the experience in Canada during the period 1971-81 was to combine declining family size with increasing dwelling size.

It is argued in some of the American literature that the declining family size will lead to "downsizing". Downsizing can take the form of choosing multiple units, as opposed to detached housing units (a degree of which is projected herein) or choosing smaller detached housing. In this regard, it appears that the downsizing being advocated in American literature is largely downsizing to smaller single detached units (1000 to 1500 sq. ft.). The desire for a detached unit for families (of all sizes) has not, it seems, disappeared from the main stream with the advent of smaller families.

As a final observation, it should be noted that the majority of demand in the 80s and 90s will not be coming from the 25-35 year group (the traditional first time buyers) - but from the 35-55 year groups where "trading-up" has been more prevalent. Therefore, "downsizing" will, per force, be targeted at a small (and declining) market segment. It would seem that the first time home buyer might more likely be moving into homes vacated by older groups that are trading-up. This paper concludes that much of the new housing built in the 80s and 90s will be large detached singles for the trade-up market.

A third trend that might be examined is the declining rate of rental as compared to ownership. However, this particular relationship is not of direct relevance to the main reason for reviewing occupancy patterns in this paper. The main reason is to review the published projection of housing types as it relates to future land consumption. Hence the focus is on structural type rather than tenure. While the relative proportions of apartments, non-apartment multiples, and single-detached will affect the projection of land requirements - the future tenure of that stock will not.

It can be mentioned in passing however that since rental as a form of tenure declines in popularity with age (until the age 65+) the proportion of rental requirements should decline substantially over the 80s and 90s; an assumption shared by numerous American and Canadian forecasters. The rate of decline of rentals as a proportion may not be as steep as the age shift would otherwise call for however. High interest rates coupled with rent control could make renting a relatively good deal and the investment incentive for ownership may not be as strong as it was in the early 70s.

Conclusion. The conclusion of the foregoing discussions is embodied in Figure 8. In Figure 8 the revised households projection (based on Figure 6) is used in conjunction with the predicted occupancy patterns (as discussed above) to yield the projected number of units required for each age group by three unit types (apartments, non-apartment multiples, and single-detached), for 1991 and 2001 with a further projection to 2011.

FIGURE 8: HOUSING UNIT REQUIREMENTS TO 2011 (to provide for household growth)

AGE	APT	1991		APT	2001		APT	2011	
		MULT	SINGLE		MULT	SINGLE		MULT	SINGLE
0-14	0	0	0	0	0	0	0	0	0
15-24	9,478	2,216	615	9,591	2,242	623	10,728	2,508	697
25-34	23,325	25,917	15,505	20,695	22,995	13,791	20,544	22,826	13,696
35-44	13,054	19,892	29,217	15,339	23,374	34,331	13,863	21,124	31,026
45-54	9,085	11,681	22,497	13,617	17,507	33,718	15,889	20,429	39,344
55-64	9,356	6,237	19,058	11,104	7,402	22,619	16,474	10,982	33,559
65+	23,412	4,257	14,898	29,242	5,319	18,608	36,073	6,559	22,956
TOTAL	87,710	70,200	101,835	99,588	78,839	123,696	113,571	84,428	141,278

In Figure 9, the number of additional units by type required to 2011 is presented. The 1991 units are calculated by subtracting away the 1981 units from the 1991 projection; the 2001 units are calculated by subtracting away the 1991 projection; and in turn the 2011 units are calculated by subtracting away the 2001 projection.

FIGURE 9: ADDITIONAL HOUSING UNITS REQUIRED FOR GROWTH IN HOUSEHOLDS TO 2011*

UNIT TYPE	1981-1991**	1991-2001	TOTAL 1981-2001	2001-2011
Apartments	16,345	11,878	28,223	13,983
Multiples	21,146	8,639	29,785	5,589
Single Detached	21,789	21,861	43,650	17,582
TOTAL	59,280	42,378	101,658	37,154

*This does not include units required to replace demolished stock, or to provide for vacancies in the stock
**1981 occupied units = 80,046 single; 49,054 multiples; and 71,365 apartments

What Figure 9 says is that from 1981 to 2001, additional housing units will be required in the proportions given in Figure 10.

FIGURE 10: ADDITIONAL HOUSING UNITS REQUIRED FOR GROWTH IN HOUSEHOLDS TO 2011 - as %

UNIT TYPE	1981- 1991	1991- 2001	1981- 2001	2001- 2011	CMHC 1981- 2001*
Apartments	27%	28%	28%	38%	38%
Multiples	36%	20%	29%	15%	13%
Single Detached	37%	52%	43%	47%	49%
TOTAL	100%	100%	100%	100%	100%

*projection for all Canadian Census Metropolitan Areas, prepared by CMHC in 1981.

Also shown in Figure 9 is CMHC's projection to 2001 for all Census Metropolitan Areas in Canada. In comparison to the projection in this report, CMHC is projecting a much higher percentage of single-detached and a much higher proportion of apartments - at the expense of non-apartment multiple units. Since both projections use the same basic methodology, this indicates that Ottawa-Carleton is not typical of the average of Canadian CMA's vis a vis the split between apartment and non-apartment multiples.

Comparison With Published Projection

A projection of new housing requirements was published with the Regional Development Strategy discussion paper in March 1984. Its purpose was to provide a rough estimate of urban residential land requirements and was based on a continuation of past trends in housing construction (1961-81) with a rough downward adjustment in the proportion of apartments (based on the passage of the baby boom through the peak period of apartment requirements). The mix of future housing requirements projected to 2001, based on those assumptions was given as follows:

PROJECTED MIX		
Unit Type	March 84	This Paper
single-detached	21%	43%
multiples	41%	29%
apartments	38%	28%

Notwithstanding the fact that the reason for establishing the mix was simply to permit a rough calculation of future land requirements, the published mix received a fair amount of criticism - for "sailing with the trends". The irony of that criticism is that it was mostly aimed at the "large" proportion of single detached units that was being projected.

The housing mix projected herein to 2001, after careful review of the forces at work on each age group, results in approximately 22,370 more single-detached; 12,200 fewer multiples; and 10,170 fewer apartments when compared to the projection published in the March 1984 Regional Development Strategy.

The large proportion of single detached (43%) projected here is confirmed by other published projections - notably the most recent CMHC projection (1981) which projects an even larger proportion (49%) - for all CMA's.* However, the current RMOC projection is at real odds with CMHC in its balanced split of apartment (28%) and non-apartment multiples (29%) - as compared to CMHC's ratio of 38:13. For interest, the proportion of singles, multiples, and apartments built in Ottawa, Nepean, Gloucester and Kanata during the period 1981-1984 (inclusive) was roughly in the ratio of 47:29:24.

*Although there is a definite problem when interpreting occupancy patterns as indicators of "preferences", the most recent direct survey of preferences that was reviewed (1984, Housing Ontario Market Executive Survey - by Environics Research Group Limited) indicates that 90% of families with heads under age 35, and 91% of families with heads aged 35-54 would prefer a single detached home. A recent American survey confirms the single detached home as the preferred choice of single person households, followed by low rise multiples - with apartments as a distant third choice.

Since the projection in this paper matches the CMHC methodology, but applies it specifically to RMOC, the projection contained herein is preferred to that of CMHC (which averages 1976 occupancy patterns across all CMA's). Further, the CMHC report did note the higher than projected uptake of the medium density category (semis, duplexes and row units) for 1976-81. The current projection (subject of this paper) is much more in line with the emergence of the medium density category. In short, the projection offered herein will produce more of a "medium density" future than the highly polarized high/low density projection of CMHC. The degree to which programs such as AHOP may have dictated this shift is not yet known (i.e. it may prove to be a perishable trend). However, the emergence of medium density housing units is strongly featured in recent American housing literature - mostly in response to the larger number of single person households, childless couples, single parent families, and "empty nesters".

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*See Also Exhibit File 14.270.001 for excerpts from journals.